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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,696	10/31/2003	Makoto Saito	2018-801	9831

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EXAMINER

NGUYEN, TU MINH

ART UNIT PAPER NUMBER

3748

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,696

Applicant(s)

SAITO ET AL.

Examiner

Tu M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) 3,5 and 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. An Applicant's Amendment filed on February 15, 2005 has been entered. Claim 1 has been amended; and claims 17-20 have been added. Overall, claims 1-3, 5-10, and 15-20 are pending in this application.

Based on a previous Applicant's Response to an Election/Restriction Requirement mailed on February 3, 2005, claims 1, 2, 6, and 15-20 will be examined in their full merit. Claims 3, 5, and 7-10 are withdrawn from further consideration by the examiner as being drawn to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Badeau et al. (U.S. Patent 6,544,310).

As shown in Figures 1 and 11, Badeau et al. disclose an exhaust gas cleaning system for an internal combustion engine (22), the exhaust gas cleaning system comprising a particulate

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filter (20), which is fixedly held by a holding member (not numbered but inherently must have) in a metallic case (102) disposed in an exhaust pipe of the engine and collects particulate matters included in exhaust gas, wherein

- the particulate filter is formed of a monolithic structural body having a multiplicity of cells (60) provided by porous walls (38) in parallel with flow of the exhaust gas,
- the particulate filter has a particulate matter collecting area having wall flow structure, in which the cells are blocked alternately with filler (92) on an exhaust gas inlet side or an exhaust gas outlet side of the particulate filter (see Figure 11), and a peripheral heat-retaining layer (110), which is formed by blocking the cells in a peripheral area extending inward from a peripheral surface of the monolithic structural body by a predetermined width, wherein at least two radially outermost cells are blocked in the peripheral area all around the radially outermost periphery of the monolithic structural body (as clearly shown in Figure 11, two radially outermost cells are blocked in the peripheral area all around the radially outermost periphery), and
- the peripheral heat-retaining layer is formed by blocking the entire cells in the peripheral area only on the exhaust gas inlet side of the monolithic structural body (see Figure 11 where the peripheral heat-retaining layer (110) is only on the inlet side of the filter), wherein the entire cells in the peripheral area are not blocked on the exhaust gas outlet side of the monolithic structural body.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badeau et al. as applied to claim 18 above, in view of legal precedent.

The system of Badeau et al. discloses the invention as cited above, however, fails to disclose that the predetermined width of the peripheral heat-retaining layer ranges from 5 mm to 20 mm.

Badeau et al. disclose the claimed invention except for specifying an optimum range of the peripheral heat-retaining layer width from 5 mm to 20 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the peripheral heat-retaining layer width, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

6. Claims 1, 2, 6, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwamoto et al. (U.S. Patent 5,853,459) in view of legal precedent.

Re claims 1, 16, and 17, as shown in Figures 1-3, Kuwamoto et al. disclose an exhaust gas cleaning system for an internal combustion engine (6), the exhaust gas cleaning system

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comprising a particulate filter (15a), which is fixedly held by a holding member (not numbered but clearly shown in Figure 3) in a metallic case (14a) disposed in an exhaust pipe (10a) of the engine and collects particulate matters included in exhaust gas, wherein

- the particulate filter is formed of a monolithic structural body having a multiplicity of cells (3) provided by porous walls (2) in parallel with flow of the exhaust gas,

- the particulate filter has a particulate matter collecting area having wall flow structure, in which the cells are blocked alternately with filler (4) on an exhaust gas inlet side or an exhaust gas outlet side of the particulate filter (see Figure 1), and a peripheral heat-retaining layer (5), which is formed by blocking the cells in a peripheral area extending inward from a peripheral surface of the monolithic structural body by a predetermined width, and

- the peripheral heat-retaining layer is formed by blocking the entire cells in the peripheral area only on an end surface of the exhaust gas inlet side (see Figure 1 where the peripheral heat-retaining layer (5) is only on the inlet side of the filter), whereas the entire cells in the peripheral area are not blocked on an end surface of the exhaust gas outlet side and the entire cells in the peripheral area are not blocked in an inside thereof between the exhaust gas inlet side and the exhaust gas outlet side (as illustrated in Figure 1, the peripheral area between the inlet and outlet sides is not blocked).

Kuwamoto et al., however, fail to disclose that the predetermined width of the peripheral heat-retaining layer ranges from 5 mm to 20 mm.

Kuwamoto et al. disclose the claimed invention except for specifying an optimum range of the peripheral heat-retaining layer width from 5mm to 20 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific

optimum range of the peripheral heat-retaining layer width, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claims 6 and 15, in the system of Kuwamoto et al., the peripheral heat-retaining layer is formed by blocking the cells, which are completely or partially included in the peripheral area (see Figure 2).

Re claim 2, in the system of Kuwamoto et al., the monolithic structural body has a peripheral skin portion (1) providing a peripheral wall of the monolithic structural body, the peripheral surface of the monolithic structural body serves as a peripheral surface of the peripheral skin portion.

Kuwamoto et al., however, fail to disclose that the peripheral skin portion has thickness in a range from 0.2 mm to 1.0 mm.

Kuwamoto et al. disclose the claimed invention except for specifying an optimum range of peripheral skin thickness from 0.2 mm to 1.0 mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of peripheral skin thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Response to Arguments

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that Kuwamoto et al. do not need to extend the peripheral heat-retaining layer to more than 5 mm because they only have to prevent particulate matter from flowing into an outer periphery that is lower in temperature and thus, results in incomplete or insufficient regeneration of the particulate filter (page 7 of Applicant's Amendment), the examiner respectfully disagrees.

The examiner maintains the rejection because as indicated on page 7 of the Amendment, applicant is able to obtain a desired or optimum heat-retaining performance with a peripheral heat-retaining layer between 5 mm and 20 mm. On the other hand, Kuwamoto et al. learn that for the particular engine they have, a peripheral heat-retaining layer between 1.3 mm and 3.6 mm is sufficient to obtain a desired and complete regeneration of the particulate filter. For another engine that generates a higher rate of particulate matter, however, it may be necessary to block more cells at the peripheral inlet of the filter in order to obtain the same desired regeneration result. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a specific optimum range of the peripheral heat-retaining layer width for Kuwamoto et al., since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

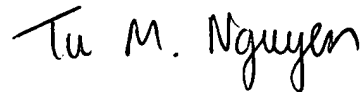
Communication

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Tu M. Nguyen". The signature is written in a cursive, flowing style.

TMN

Tu M. Nguyen

March 30, 2006

Primary Examiner

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